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ABSTRACT
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(PT3) project, online distance courses in College of Education at New Mexico
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describe and analyze College of Education students' beliefs, expectations,
and attitudes toward online learning. This is a qualitative ongoing case
study. Through purposive sampling techniques, 21 students from 6 different
online graduate courses in the College of Education were selected as
participants. Videotaped interviews were conducted to explore and evaluate
students' reflections toward online learning in its natural environment. This
study is exploratory in order to allow insights to emerge from a recursive
data analysis process. The variables in the site of the research are highly
complex and extensive. The research data is very context dependent and needs
to be collected in its natural environment without controls and
manipulations. (Author)

Creating a Virtual Community with PT3: College of Education Students' Beliefs, Expectations and Attitudes toward Online Learning

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Abstract: Through the Preparing Tomorrow's Teachers to Use Technology (PT3) project, online distance courses in College of Education at New Mexico State University (NMSU) have become an essential component of the Teacher Education Program. Pre-service teachers have been engaged in the process of learning with and about technology. The main purpose of this study is to describe and analyze College of Education students' beliefs, expectations, and attitudes toward online learning. This is a qualitative ongoing case study. Through purposive sampling techniques, twenty-one students from six different online graduate courses in the College of Education were selected as participants. Videotaped interviews have been conducted to explore and evaluate students' reflections toward online learning in its natural environment. This study is exploratory in order to allow insights to emerge from a recursive data analysis process. The variables in the site of the research are highly complex and extensive. The research data is very context dependent and needs to be collected in its natural environment without controls and manipulations.

Overview of the Study

Over the past few years, online distance education has been explosively popular with College of Education students at New Mexico State University (NMSU). The Preparing Tomorrow's Teachers to Use Technology (PT3) project has been helping faculty integrate online learning environments into their courses. As a result, the College is dealing with the enormous growth of the electronic learning environments, which has encouraged the University to open its door to learn and teach in virtual milieus where students and professors can communicate with each other electronically. With the rapid growth and increasing accessibility of the Web, many professors are now offering various types of online-based courses, ranging from partially online to completely online, to their students. Email, electronic conferencing, synchronous and/or asynchronous chat and electronic bulletin boards have been used to enhance many classes in the College of Education. With the use of virtual learning milieus as a supplement to on-campus classes as well as in online classes, there is no doubt that the traditional classrooms are no longer bound by time and space in the College of Education.

When used appropriately online distance education can provide increasing numbers of convenient and relatively inexpensive learning and studying environments; it also has the potential to support real-world experiences to not only faculty but also students at NMSU. The College of Education has invested heavily in WebCT as a virtual learning environment. Since WebCT has provided new opportunities to use the Web as a medium for instruction, many courses and programs in the College of Education have been rapidly changing to keep pace with the use of WebCT.

WebCT is a unique educational delivery system. The use of WebCT, however, as a delivery medium in the academic setting in the College has started to change students' roles and learning strategies. Unlike traditional education, WebCT as an instructional tool has started to make College of Education students take responsibility for their own learning at their own pace in their own space. Learning with

WebCT has also put students at the center of their learning process. Professors are embracing WebCT into their curriculum both for online instruction and to supplement traditional education by incorporating new ways of accessing, delivering, exchanging and sharing information with their students whose beliefs, expectations and attitudes toward online learning have become an important tool for addressing problems, which may arise in implementing online tools.

Technology Integration into Learning Environment

WebCT by itself is just an electronic data source for the students. Like the use of any other educational media, designing WebCT as an instructional tool must be based on instructional theories, design models, and strategies. Since information can be sent though WebCT quickly, students may need to carefully redesign and revolutionize their new roles around online learning, methods, techniques and strategies in interactive and collaborative virtual learning activities.

This study has taken a grounded theory approach to allow the researchers to explore and discover the students' reflections toward online teaching for two reasons. First, increasingly academic institutions are beginning to offer graduate level teacher education courses online. Secondly, online learning opportunities and students' beliefs, expectations and attitudes toward online learning are relatively new phenomena. Students' reflections, however, toward online learning need to be more clearly defined, examined and/or analyzed to integrate and implement this technology into the curriculum efficiently. However, there is a lack of theoretical or empirical research on this topic (Wills & Becht 1997, Mendels 1998, Valenta et al 2001).

The main purpose of this study is to examine College of Education students' beliefs, expectations and attitudes toward online learning in higher education settings. Before entering the study, the researchers tend to analyze the research data inductively rather than to prove or disprove a hypothesis. The main focus in this study is: 1) to investigate and understand the insider's views toward teaching online courses in different subject areas, and 2) to expound on this study participants' perspectives and interpretations rather than researcher imposed categories.

Research Design
Participants and Setting

The purpose of this study is to investigate the students' beliefs, expectations and attitudes toward a particular phenomenon of online learning in different subject area experiences. During the 2001-2002 school year, research was conducted within the College of Education at New Mexico State University, a medium-sized research university in the Southwest. The College of Education has been offering classes online (in various degrees, i.e. enhanced or completely online) approximately four years.

The students in the College of Education were chosen for three major reasons: First, many members of the current students have been strongly interested in using the web as an instructional tool to make possible communication between regular class sessions (Baptiste & Kurubacak 2002). Each week students would post their assignments and any questions, concerns, or ideas online. The students could read, receive, post, exchange and/or share information on the discussion topics of each week before and after class. Sometimes students would email the course professor's account directly, when they had particular questions, suggestions and /or comments any time. Second, the most of course curriculums in the College of Education have included both computer-based learning activities into classroom and web-based learning activities, WebCT has been used for posting the students' messages and papers via email and electronic bulletin board. Finally, the majority of students in this study have been considering the idea of taking courses completely online in the near future and some of them are already taking courses online.

Twenty-one students from six different online classes in Teacher Education Program at the College of Education were identified for the interviews according to their willingness to participate the study. Four of these twenty-one students were male and seventeen of the participants were female in this research.

Data Collection

This study utilized qualitative data to provide detailed information to the researchers for analysis. Video and audio type taped interviews have been the instruments in this study. Therefore, the open-ended interview questions are designed to collect and analyze data on the students' beliefs, expectations and attitudes toward online learning in different subject areas. Each interview's questions were developed and modified according to investigating the focus of this study.

The researchers allowed the participants from the six different online courses in Teacher Education Program, as groups, to set the interview dates and locations themselves. Face-to-face interviews were held with all six groups in the College of Education building. Each interview lasted approximately 45 minutes in length. Although all interviews were video and audio recorded, the researchers wrote notes that summarized the major points of each session.

Researchers have been following a careful data management process to ensure high-quality accessible data and documentation of data collected. For these reasons, the researchers regularly recorded and systematically stored qualitative data on computers and videocassettes. The data has been indexed for easy and consistent retrieval.

Data Analysis

The analysis of the students' beliefs, expectations and attitudes toward online learning on the different subject areas is ongoing process, that began at the end of the Fall 2001 semester and will continue through the final written report. The data analysis process in this study is analytic and recursive to inform further decisions on data being collected. It also is restructured, flexible and open to the discussions with the stakeholders and reviews of related literature.

During the data analysis procedure, the researchers briefly followed these steps given in a logical order: 1) transcribed each video and audio type cassettes, and 2) identified patterns and themes. After transcribing the cassettes and identifying patterns and themes, the researchers triangulated the qualitative data and reported the results in descriptive and narrative form together.

Discussions and Interpretations

Content analysis of this study indicated that students have both positive and negative beliefs, expectations and attitudes toward online learning. Among the students' positive reflections in this study were that online courses could provide not only enhanced flexibility, but also student convenience and access to updated course information. Among some of the negative reflections that students reported about their experiences with online learning was decreased human interaction and collaboration as well as the increase in students' course work. The lack of technical support and knowledge about technology seems to be major problems for the students in this online learning environment.

Positive Students' Beliefs, Expectations and Attitudes toward Online Learning

The participants in this study learned best when they developed positive attitudes toward virtual learning environments. These positive attitudes motivated them to solve a problem, accomplish a task, set specific goals, work with others and informational resources during the learning process. However, it took time for these students to adopt a positive attitude towards online learning. The twenty-one interviewees in this study could eliminate their possible biases toward online learning when the instructors were aware of which WebCT methodologies and techniques affected their beliefs, expectations, and attitudes.

Therefore, the structure of any online course must involve determining the overall instructional approach, the theoretical and educational basis for that approach, potential strategies, methods, and instructional activities (Bannan & Milheim 1997). The participants in this study especially emphasized that they enjoyed working within the virtual environment because of enhanced flexibility, convenient course scheduling, and round-the-clock access to course related information.

Flexibility and Convenience

The participants in this study were working full time or part time while earning their master or doctorate degrees in the College of Education. The majority of students had to commute at least one hour to the campus everyday. What was most important to students in this study was that online distance education not only provided flexible time management, but also allowed them to save on travel time.

All of the interviewed students in this study stated that they could work anywhere at their own pace. Monica pointed out, *"[It'] comfortable for me to study at home, especially after the children go to the beds...but you have to discipline yourself, otherwise you can easily focus on doing housework rather than doing your assignments in your cozy study place"* However, the participants in this study were also aware that it required high self-discipline and self-confidence. Robert stated, *"[I] would like to study at home, however, you have to firmly arrange your schedule... to take the class online is different from...to attend the class on the campus...Also you can raise your voice online to ask a help when you need. It's not easy every time...sometimes I feel I am the goofiest student in the class [laughing]...WebCT-based course requires self-discipline. It is easy to be frustrated and drop out. "* Robert was not the only participant who felt that the online learning environment was different from face-to-face class settings. Nineteen of the other participants also agreed with Robert's viewpoint on virtual learning milieus; "students roles and responsibilities in online classes were not the same as their positions and tasks in a traditional face-to-face course".

Access the Course Online

Twenty-one interviewees highlighted that they could find useful information about the course and course work in their virtual class. These participants also pointed out that they regularly accessed WebCT to get online course information throughout the semester. All participants in this study indicated that they enjoyed reading about the course and assignments. One of them, Juanita, made her statement on this issue: *"[you] can read the instructor's messages before coming to class...I had a hard copy syllabus, but I always check the online one, if she [the instructor] changes the schedule or announce new activities.... I can learn new information very promptly, it is helpful."* Juanita had significant previous experience taking WebCT classes and did not lack self-confidence. She regularly accessed the course web page from work because her work place provided a faster modem.

Of twenty-one participants, the majority pointed out that they would like to read the assignments posted by the other students in their classes. John stated: *"[I] always read the posted assignments...especially before the class...I' am amazed...the people focus on different details on the assignments...sometimes I have never ever thought these details."* John also highlighted that *"[it] was very difficult to express himself or herself sufficiently...like at the face-to-face class."* However, the majority of the interviewees in this study reflected their anxiety about the online assignments and other posting messages. Tim expressed the following statement: *"[it's] kind of weird; because everybody can read you...not only the instructor."* The participants in this study felt that they were more motivated to work hard on their assignments, because the professor and other students would be reading them.

Negative Students' Beliefs, Expectations and Attitudes toward Online Learning

There were three main barriers for the students in this study to learn with online environment: 1) technological problems, 2) lack of technical support, and 3) lack of knowledge about technology. The students in this study sometimes had difficulties accessing the online course. John stated: *"[It's] frustrating to have problems, it's frustrating not to find the solution, and not to fix it."* The lack of accessibility to the online course created negative reflections toward virtual learning milieus.

This study indicates that students are more successful online when they are trained on online learning and have regular technical support. Students must be encouraged and motivated to take full advantage of online learning milieus.

Limited Interaction and Collaboration Online

Interviewed students indicated that they did not have enough information about online learning and their changing roles in electronic learning settings. Kim stated, *"[I] always miss the class online, thus it*

is very hard for me to catch up...At the beginning of the semester, I had no idea about how I could access the course WebCT site, it took nearly over three weeks to learn, it is really heart breaking." Thus, they did not successfully nor actively interact with other students, faculty, and online educational resources. Also, the majority of the participants in this study stated that they needed to learn the skills of online communication. John pointed out, "*[Maybe] another form of communication is needed online. WebCT courses require high-level self-discipline as well. You have to logon regularly the course.*"

There were many comments that specifically addressed the lack of collaboration in online learning. Tim expressed his feelings about online collaboration, "*[Online] communication is not like to communicate somebody else in person. WebCT is not for me to talk with other. I always prefer to interact my friends face-to-face. It's warm and comfortable. You cannot get feedback promptly online. You have to always be careful whether somebody else answers you or not.*" When the interviewed students communicated with each other on WebCT, the students were not able to reflect on their experiences and fix their learning problems. The participants in this study, however, indicated that a majority of students in College of Education when lacking knowledge and experience with online environments tend to generate a lack of confidence when communicating online. The learning strategies, methods, and activities in online learning setting are different from face-to-face courses. Uncertainty creates curiosity, anxiety, and conflict in these students who have low comfort levels with using online technology. As a result, the students were less eager to participate in online learning. While virtual learning settings might be helpful in achieving vital educational goals, faculty members suggest that face-to-face communications are important to promote effective social interactions among students and between students and faculty.

The majority of the interviewed students preferred face-to-face class interactions. They also pointed out that their age, gender, personality, and cultural backgrounds highly affected their participation and contributions in various educational settings. Juanita strongly stated, "*[I] am better at face-to-face communication in person than at communicating online. I would like to observe the mimics, gestures and body languages when talking with someone. I have to see the eyes when I am communicating with her/him.*" Like Juanita, John (another participant) made few comments to the online course. He acknowledged that the variety cultural backgrounds of the students could support effective communication, but the face-to-face communication was more valuable and helpful than online interaction.

In addition, the online learning, communicating, and writing skills of students could be major barriers to interactive online learning. Kim highlighted that "*[special] l learning skills are needed for taking a WebCT class...for example writing is not easy for me...I don't enjoy typing the keyboard to do my assignments...It takes too much time for me to type, and it is not fun...It is easy for me to speak in person.*" Like Kim, Tim stated, "*[Reading] on screen is very difficult...I have to printout each screen to get the real his/her point of view*" Juanita, like Kim, also expressed similar feelings about studying online, "*[I] am one of the slower, and it takes all my time to write something for the class...I don't like it.*" When an online learning environment has cross-cultural communication and uses a systematic approach to deliver content, online students can connect theory and practice as well as have more in depth reflection in the construction of knowledge.

Overwhelmed Course Work

The majority of the participants in this study felt more time was spent on the WebCT class than in regular classroom. Jane loudly expressed her feelings with the statement, "*[I] did have to work very hard for the online class...I strongly feel online courses required more work.*" All of students in this study pointed out that they often times felt overloaded with information in their online classes and that virtual learning environments required more work. The majority of the participants in this study, like Jane, expressed their feelings of being overwhelmed by not only the quality but also the quantity of contributions of the instructor and other students. Kim pointed out, "*[I] feel I cannot write and think at a high level like the others in the class...I think it's depend on the course content, but I lost my concentration on the coursework...*" One of the most challenging aspects in implementing an online learning in higher education can be the structure and instructional strategies of the course content.

Conclusions

The body of the research literature dealing with students' beliefs, expectations and attitudes toward virtual learning milieus is small, but growing (Valenta et al. 2001). Online learning in higher education is a recent phenomenon, which requires more research as well. The use of virtual learning environments is gradually shifting, so it is necessary to keep pace with improvement on the learning process. The use of online communication in academic settings is increasing rapidly and has become a vital issue studied. This study shows that the key points of online learning are to offer online learning techniques and to provide reliable and regular technical support. In addition, encouraging and motivating students to take advantages of virtual learning as an educational tool is also a necessary measure to insure effective utilization of the online learning milieu.

An essential step in integrating online learning environments productively in higher education is starting with an explicit definition of the educational role of online learning and understanding the changing roles of students in virtual milieus. Integrating online learning into learning can lead the College of Education to adapt changing roles, needs, interests, and concerns. Students are, doubtlessly, one of the most important components in online teaching. On the other hand, the roles of students have been changing dramatically in virtual learning milieus; their needs, concerns and roles vary substantially from face-to-face educational settings. The major problem is that many students do not understand their responsibility to be active contributors of learning in the virtual milieu and that the professor's role is to be a facilitator and a mentor. Therefore, not only must students be trained how to instigate and contribute as online participants on WebCT, but they must also acquire good online learning skills and strategies before taking a WebCT based course.

To create a successful collaborative online learning environment, group or cooperative learning must be emphasized among students, and between students and professors. Virtual collaboration, which covers active participation and interaction, are essential experiences that students should have. Thus, WebCT must organize and structure online interaction among students, professors, experts from the outside, and/or global online resources with fewer time and space limitations. Online learning must also encourage and engage students to work together during learning activities. Conversely, promoting and maximizing group work and collaborative learning in a virtual environment is not easy. It is also difficult to identify social presence, authentic tasks, and cognitive strategies such as taking ownership of a task whose cognitive challenges are consistent with the cognitive demands of the design environment. This environment must support knowledge construction and idea sharing. This virtual learning setting must also enable students to continue work on their own tasks.

The overall teaching atmosphere in College of Education is highly academic and professional. Nevertheless, lack of online learning experiences and computing skills affect students' beliefs, expectations and attitudes toward online learning. The major challenge facing students is learning how to restructure their learning styles (through the use of online learning for better utilization of current resources) and how to implement improvements in online learning milieus. The delivery of courses via virtual learning environments requires training students in ways that maximize and allow them to further adapt their educational strategies. Thus, it is an essential issue to provide excellent training and technical support for higher education students.

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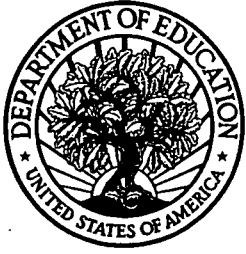
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